REMARKS

In the Office Action mailed January 7, 2004, the Examiner noted that claims 5 and 11-23 were pending, allowed claim 5, and rejected claims 11-23. Claims 5 and 11-23 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections are traversed below.

On page 2 of the Office Action the Examiner rejected claims 11-23 under 35 U.S.C. § 103 as obvious over Lynch and Yagasaki.

An interview was held with the Examiner on June 28, 2004 and the substance of the interview is discussed below.

The Examiner alleged that Yagasaki teaches motion vector prediction based on motion vectors of blocks adjacent to the target block. As discussed with the Examiner, the present claimed invention calls for predicting motion vectors based on a plurality of blocks adjacent to the target block (see claims 5, 11, 12, 13, 20, 21 & 22). That is, in the invention, the target block and at least two other (plural adjacent) blocks are involved in the prediction (a total of at least three blocks). In contrast, Yagasaki, at col. 18, lines 1-42 discusses only the target block and a single adjacent block, see particularly col. 18, lines 28 & 29. That is, Yagasaki uses only two blocks. It is submitted that the present invention is distinguishable over Lynch and Yagasaki for this reason and withdrawal of the rejection is requested.

As discussed with the Examiner, Lynch is directed to an improvement in motion vector prediction. Lynch discusses two ways to make a prediction and also a prior method concerning how to most efficiently send the prediction from the transmitter to the receiver. The first and prior prediction method is called an Independent Search (IS) method and the second, and improved, method of the Lynch patent, is called an Area Overlap (AO) method.

Starting in col. 1, line 7 through about line 40 Lynch discusses the first Independent Search (IS) method. In the IS method, essentially, for each target motion block the system searches for the block that best matches the shape and size of the target block. Then, that block is used for the prediction. Once the prediction is completed, a decision is made as to how to most efficiently transmit the vector and the prediction.

The prior method of deciding "What to transmit..." (see col. 1, line 60) to efficiently transmit the prediction starts at Lynch col. 1, line 43 and runs into col. 2. This discussion notes that a Mean Square Error (MSE) is determined and this is used to decide which mode, backward (from the motion block to the matching), forward (the matching being the starting point) and

interpolative (the average of the motion and the matching blocks are used for the MSE). The mode that results in the least MSE is the mode used to transmit the data, since the smallest MSE results in the least number of bits to transmit. The system then transmits the vector, the mode and the residue when the forward or backward mode has the smallest MSE and transmits both vectors and the mode when the MSE is the smallest for interpolative and it is the most efficient to transmit.

The improved Area Overlap (AO) method discussion starts in col. 5 at line 7 and runs for the remainder of the Lynch discussion. Essentially, in the AO method, a determination of the overlap between a projected block and several blocks of the B frame is determined. The prediction is based on the block with the most overlap. After the AO method prediction is made, as noted in Lynch col. 11, lines 18-22, the improved Lynch approach uses MSE based the prior sending method to determine what to transmit in order to transmit the vector and residual most efficiently.

As can be seen from the above discussion, the two prediction modes of Lynch (IS and AO) do not involve determining the accuracy of the prediction (claims 5, 11, 12, 13, 20 & 21) based on degrees of non-uniformity of the motion vectors (claims 5, 11, 12, 13 & 20) using a threshold (claim 22) as in the present application.

It is submitted that the present invention is patentably distinctive over Lynch and Yagasaki as recognized by the Examiner in the interview. Withdrawal of the rejection for this additional reason is requested.

The dependent claims depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above. The dependent claims also recite additional features not taught or suggested by the prior art. For example, the present invention determines accuracy or non-uniformity by calculating the absolute value of the differences between all of the motion vectors for the adjacent blocks, then compares these absolute values to a threshold value and if any of the absolute values are greater than the threshold, the vectors are not uniform and the prediction is not accurate thus requiring the selection of a more detailed decoding. This is particularly discussed starting on page 28 of the application with respect to figure 12. This is very different from Lynch and Yagasaki. This distinction is particularly emphasized in claim 23. As another example, dependent claims 14-16 emphasize accuracy predictions made on vectors already decoded for in an area adjacent to the block. Lynch does not teach or suggest this. It is submitted that the dependent claims are independently patentable over the prior art.

It is submitted that the present claimed invention patentably distinguishes over Lynch and Yagasaki, and withdrawal of the rejection is requested.

It is submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

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